

# Work Order ID 97897

\*97897\*

Page 1

March-01-13 1:49:52 PM

Item ID: D044-715-011 Accept \*N900040100\* Setup Start \*NS1\*  
 Revision ID: Stop \*NS2\*  
 Item Name: R44 Cargo Mirror, 6 inch Round  
 Start Date: 3/01/13 Start Qty: 2.00 \*2\* Cust Item ID:  
 Required Date: 3/15/13 Req'd Qty: 2.00 \*2\* Customer:  
 Reference:

Approvals: Process Plan: MLJ Date: 13-03-04 Tooling: Date: Run Start \*NR1\*  
 QC: Date: SPC (Y/N): Date: Stop \*NR2\*

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
Draw Nbr	Revision Nbr								
D3243	Rev A								
IIN-D044-715	Rev A								
100	DOCUMENT CONTROL	0.00							
*100*									
DC	Memo	0.00							
Document Control	Photocopy bluefile & type labels per PPPD044-715-011		CHG003						
110	Pick Kit	0.00							
*110*									
Packaging	Memo	0.00							
Packaging									

DAS 06 9-88 B/S 127

(2x) 13-5-9 (2)

2x 13-5-9

NCR: Yes / No

## WORK ORDER NON-CONFORMANCE / UPDATE

DQA: \_\_\_\_\_ Date: \_\_\_\_\_

QA Closed: \_\_\_\_\_ Date: \_\_\_\_\_

Work Order: _____  Part No. _____  NCR No. _____	<b>DISPOSITION</b>  <div style="display: flex; justify-content: space-around;"> <div> <input type="checkbox"/> Rework  <input type="checkbox"/> Scrap  <input type="checkbox"/> Use-as-is  <input type="checkbox"/> Work Order Update         </div> <div> <input type="checkbox"/> Skid-tube  <input type="checkbox"/> Machining  <input type="checkbox"/> Thermoforming  <input type="checkbox"/> Large Fab         </div> <div> <input type="checkbox"/> Crosstube  <input type="checkbox"/> Small Fab  <input type="checkbox"/> Finishing  <input type="checkbox"/> Composite         </div> <div> <input type="checkbox"/> Water Jet  <input type="checkbox"/> Prod. Eng. Coord.  <input type="checkbox"/> Rec/Store/Packaging  <input type="checkbox"/> Supplier         </div> <div> <input type="checkbox"/> Engineering  <input type="checkbox"/> Quality  <input type="checkbox"/> Other         </div> </div>
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Root Cause	Date	Step	Qty	Description of work order update or Non-conformance	Initial Chief Eng	Action Description	Sign & Date	Verification	QC Inspector
Doc/Data									
Equip/Tooling									
Operator									
Material									
Setup									
Other									
Process									
Supplier									
Training									
Unapproved									

### FAULT CATEGORY

<b>Landing Gear</b> <input type="checkbox"/> Bending <input type="checkbox"/> Centre Not Concentric to O/S <input type="checkbox"/> Cracks <input type="checkbox"/> Crushed/Crimped. <input type="checkbox"/> Cuffs <input type="checkbox"/> Heat Treat <input type="checkbox"/> Inspection Strip in Tube <input type="checkbox"/> Ripples in Bend <input type="checkbox"/> Torque Waves in Extrusion <input type="checkbox"/> Turning Sequence <input type="checkbox"/> Wave/Twist in Tube	<b>General</b> <input type="checkbox"/> Bend <input type="checkbox"/> BOM/Route <input type="checkbox"/> Broken/Damaged <input type="checkbox"/> Burrs <input type="checkbox"/> Contamination <input type="checkbox"/> Countersink <input type="checkbox"/> Cut Too Short <input type="checkbox"/> Drill Holes <input type="checkbox"/> Drawing <input type="checkbox"/> Finish <input type="checkbox"/> Folio	<input type="checkbox"/> Grain <input type="checkbox"/> Hardware <input type="checkbox"/> Inspection Incomplete <input type="checkbox"/> Instructions Incomplete/Unclear <input type="checkbox"/> Maintenance <input type="checkbox"/> Mislabeled <input type="checkbox"/> Misread <input type="checkbox"/> Offset <input type="checkbox"/> Out of Calibration <input type="checkbox"/> Out of Sequence <input type="checkbox"/> Outside Dimensions
--	---	---

☐ Ovalized  
☐ Over/Under tolerance  
☐ Part Incorrect  
☐ Part Lost/Missing  
☐ Part Moved  
☐ Positioned Wrong  
☐ Power Loss/Surge

☐ Pressure/Forced  
☐ Temperature/Cure  
☐ Weld  
☐ Wrong Stock Pulled  
☐ Other

# Work Order ID 97897

\*97897\*

Page 2

March-01-13 1:49:52 PM

Item ID: D044-715-011

Accept

\*N900040100\*

Setup Start \*NS1\*

Revision ID:

Stop \*NS2\*

Item Name: R44 Cargo Mirror, 6 inch Round

Start Date: 3/01/13 Start Qty: 2.00 \*2\*

Cust Item ID:

Required Date: 3/15/13 Req'd Qty: 2.00 \*2\*

Customer:

Reference:

Approvals: Process Plan: \_\_\_\_\_ Date: \_\_\_\_\_ Tooling: \_\_\_\_\_ Date: \_\_\_\_\_

Run Start \*NR1\*

QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_

Stop \*NR2\*

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
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120 QC4- 100% Inspect kits for completeness 0.00

\*120\*

QC

Memo

0.00

Quality Control

DAS  
06  
8-89 13/5/27

130 0.00

\*130\*

Packaging

Packaging

Memo

0.00

Packaging

Identify and pack for shipping as per PPP D044-715-011

Location: 042

24 8 13-5-27

140 QC21- Final Inspection - Work Order Release 0.00

\*140\*

QC

Memo

0.00

Quality Control

13/05/28

MLJ 13-05-28

NCR: Yes / No

## WORK ORDER NON-CONFORMANCE / UPDATE

DQA: \_\_\_\_\_ Date: \_\_\_\_\_

QA Closed: \_\_\_\_\_ Date: \_\_\_\_\_

Work Order: _____  Part No. _____  NCR No. _____	<b>DISPOSITION</b>  Rework <input type="checkbox"/> Scrap <input type="checkbox"/> Use-as-is <input type="checkbox"/> Work Order Update <input type="checkbox"/>	<b>AGAINST DEPARTMENT/PROCESS</b>  <table style="width: 100%;"> <tr> <td>Skid-tube <input type="checkbox"/></td> <td>Crosstube <input type="checkbox"/></td> <td>Water Jet <input type="checkbox"/></td> <td>Engineering <input type="checkbox"/></td> </tr> <tr> <td>Machining <input type="checkbox"/></td> <td>Small Fab <input type="checkbox"/></td> <td>Prod. Eng. Coord. <input type="checkbox"/></td> <td>Quality <input type="checkbox"/></td> </tr> <tr> <td>Thermoforming <input type="checkbox"/></td> <td>Finishing <input type="checkbox"/></td> <td>Rec/Store/Packaging <input type="checkbox"/></td> <td>Other <input type="checkbox"/></td> </tr> <tr> <td>Large Fab <input type="checkbox"/></td> <td>Composite <input type="checkbox"/></td> <td>Supplier <input type="checkbox"/></td> <td></td> </tr> </table>	Skid-tube <input type="checkbox"/>	Crosstube <input type="checkbox"/>	Water Jet <input type="checkbox"/>	Engineering <input type="checkbox"/>	Machining <input type="checkbox"/>	Small Fab <input type="checkbox"/>	Prod. Eng. Coord. <input type="checkbox"/>	Quality <input type="checkbox"/>	Thermoforming <input type="checkbox"/>	Finishing <input type="checkbox"/>	Rec/Store/Packaging <input type="checkbox"/>	Other <input type="checkbox"/>	Large Fab <input type="checkbox"/>	Composite <input type="checkbox"/>	Supplier <input type="checkbox"/>	
Skid-tube <input type="checkbox"/>	Crosstube <input type="checkbox"/>	Water Jet <input type="checkbox"/>	Engineering <input type="checkbox"/>															
Machining <input type="checkbox"/>	Small Fab <input type="checkbox"/>	Prod. Eng. Coord. <input type="checkbox"/>	Quality <input type="checkbox"/>															
Thermoforming <input type="checkbox"/>	Finishing <input type="checkbox"/>	Rec/Store/Packaging <input type="checkbox"/>	Other <input type="checkbox"/>															
Large Fab <input type="checkbox"/>	Composite <input type="checkbox"/>	Supplier <input type="checkbox"/>																

Root Cause	Date	Step	Qty	Description of work order update or Non-conformance	Initial Chief Eng	Action Description	Sign & Date	Verification	QC Inspector
Doc/Data									
Equip/Tooling									
Operator									
Material									
Setup									
Other									
Process									
Supplier									
Training									
Unapproved									

### FAULT CATEGORY

<b>Landing Gear</b> <input type="checkbox"/> Bending <input type="checkbox"/> Centre Not Concentric to O/S <input type="checkbox"/> Cracks <input type="checkbox"/> Crushed/Crimped <input type="checkbox"/> Cuffs <input type="checkbox"/> Heat Treat <input type="checkbox"/> Inspection Strip in Tube <input type="checkbox"/> Ripples in Bend <input type="checkbox"/> Torque Waves in Extrusion <input type="checkbox"/> Turning Sequence <input type="checkbox"/> Wave/Twist in Tube	<b>General</b> <input type="checkbox"/> Bend <input type="checkbox"/> BOM/Route <input type="checkbox"/> Broken/Damaged <input type="checkbox"/> Burrs <input type="checkbox"/> Contamination <input type="checkbox"/> Countersink <input type="checkbox"/> Cut Too Short <input type="checkbox"/> Drill Holes <input type="checkbox"/> Drawing <input type="checkbox"/> Finish <input type="checkbox"/> Folio	<input type="checkbox"/> Grain <input type="checkbox"/> Hardware <input type="checkbox"/> Inspection Incomplete <input type="checkbox"/> Instructions Incomplete/Unclear <input type="checkbox"/> Maintenance <input type="checkbox"/> Mislabeled <input type="checkbox"/> Misread <input type="checkbox"/> Offset <input type="checkbox"/> Out of Calibration <input type="checkbox"/> Out of Sequence <input type="checkbox"/> Outside Dimensions  <input type="checkbox"/> Ovalized <input type="checkbox"/> Over/Under tolerance <input type="checkbox"/> Part Incorrect <input type="checkbox"/> Part Lost/Missing <input type="checkbox"/> Part Moved <input type="checkbox"/> Positioned Wrong <input type="checkbox"/> Power Loss/Surge  <input type="checkbox"/> Pressure/Forced <input type="checkbox"/> Temperature/Cure <input type="checkbox"/> Weld <input type="checkbox"/> Wrong Stock Pulled  <input type="checkbox"/> Other
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# Picklist Print

May-17-13 9:12:42 AM

Page 1

Work Order ID: 97897

Parent Item: D044-715-011

Parent Item Name: R44 Cargo Mirror, 6 inch Round

Start Date: 3/01/13

Required Date: 3/15/13

Start Qty: 2.00

Required Qty: 2.00

Comments: IPP Rev:A04.02.18New issueKJ/JLM  
IPP Rev:B 06-04-28 Manufactured on Water Jet JLM  
IPP Rev:C 08-06-10 as per ECN1195p DD verified by:EC IPP Rev:D 11.05.04 remove FE-032-EF DD verified by:EC

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
D3243-041 Bracket Assembly		Manufactured	No			110	Each	3.0000	1	2	SP		
				<u>Location</u>		<u>Loc Qty</u>		<u>Loc Code</u>					
				ST228		3							
				76859		1							
				86286		2							
D1048 Saddle		Manufactured	No			110	Each	14.0000	2	4	SP		
				<u>Location</u>		<u>Loc Qty</u>		<u>Loc Code</u>					
				GA		14							
				76951		14							
D1049 Saddle		Manufactured	No			110	Each	50.0000	2	4	SP		
				<u>Location</u>		<u>Loc Qty</u>		<u>Loc Code</u>					
				GA		50							
				94046		26							
				99603		24							
D2010-104 Mirror Arm 369/500		Manufactured	No			110	Each	2.0000	1	2	SP		
				<u>Location</u>		<u>Loc Qty</u>		<u>Loc Code</u>					
				ST220		2							
				90287		2							
D2011-101 6" Mirror		Manufactured	No			110	Each	38.0000	1	2	SP		
				<u>Location</u>		<u>Loc Qty</u>		<u>Loc Code</u>					
				ST229		38							
				89784		26							
				98267		12							

# Picklist Print

March-01-13 1:49:51 PM

Page 2

Work Order ID: 97897

Parent Item: D044-715-011

Parent Item Name: R44 Cargo Mirror, 6 inch Round

Start Date: 3/01/13

Required Date: 3/15/13

Start Qty: 2.00

Required Qty: 2.00

AN3-4A Bolt Purchased No

110 Each 493.0000

4 8 SP

Location	Loc Qty	Loc Code
ST350	143	
120308	80	
122814	63	
ST512	350	
120770	200	
123900	150	

AN526C1032R10 Screw Purchased No

110 Each 119.0000

4 8 SP

Location	Loc Qty	Loc Code
FP001	49	
108062	49	
ST346	70	
114494	70	

ALS4-1032-130 Insert Purchased No

110 Each 9,116.0000

4 8 SP

Location	Loc Qty	Loc Code
FP001	389	
119084	116	
120671	89	
120807	36	
120837	8	
121269	140	
ST279	2040	
124080	2040	
st510	6687	
124163	6687	

AN960JD10L Washer NAS1149D0332J Purchased No

110 Each 0.0000

4 8 m125268 SP 12-5-9

March-01-13 1:49:51 PM

Shop Packet Print

Page 2

NCR: Yes / No

**WORK ORDER NON-CONFORMANCE / UPDATE**

DQA: \_\_\_\_\_ Date: \_\_\_\_\_

QA Closed: \_\_\_\_\_ Date: \_\_\_\_\_

Work Order: _____  Part No. _____  NCR No. _____	<b>DISPOSITION</b>  Rework <input type="checkbox"/> Scrap <input type="checkbox"/> Use-as-is <input type="checkbox"/> Work Order Update <input type="checkbox"/>	<b>AGAINST DEPARTMENT/PROCESS</b>  <table style="width: 100%;"> <tr> <td>Skid-tube <input type="checkbox"/></td> <td>Crosstube <input type="checkbox"/></td> <td>Water Jet <input type="checkbox"/></td> <td>Engineering <input type="checkbox"/></td> </tr> <tr> <td>Machining <input type="checkbox"/></td> <td>Small Fab <input type="checkbox"/></td> <td>Prod. Eng. Coord. <input type="checkbox"/></td> <td>Quality <input type="checkbox"/></td> </tr> <tr> <td>Thermoforming <input type="checkbox"/></td> <td>Finishing <input type="checkbox"/></td> <td>Rec/Store/Packaging <input type="checkbox"/></td> <td>Other <input type="checkbox"/></td> </tr> <tr> <td>Large Fab <input type="checkbox"/></td> <td>Composite <input type="checkbox"/></td> <td>Supplier <input type="checkbox"/></td> <td></td> </tr> </table>	Skid-tube <input type="checkbox"/>	Crosstube <input type="checkbox"/>	Water Jet <input type="checkbox"/>	Engineering <input type="checkbox"/>	Machining <input type="checkbox"/>	Small Fab <input type="checkbox"/>	Prod. Eng. Coord. <input type="checkbox"/>	Quality <input type="checkbox"/>	Thermoforming <input type="checkbox"/>	Finishing <input type="checkbox"/>	Rec/Store/Packaging <input type="checkbox"/>	Other <input type="checkbox"/>	Large Fab <input type="checkbox"/>	Composite <input type="checkbox"/>	Supplier <input type="checkbox"/>	
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Large Fab <input type="checkbox"/>	Composite <input type="checkbox"/>	Supplier <input type="checkbox"/>																

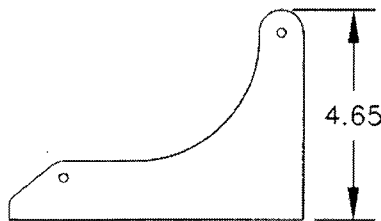
Root Cause	Date	Step	Qty	Description of work order update or Non-conformance	Initial Chief Eng	Action Description	Sign & Date	Verification	QC Inspector
Doc/Data									
Equip/Tooling									
Operator									
Material									
Setup									
Other									
Process									
Supplier									
Training									
Unapproved									

**FAULT CATEGORY**

<b>Landing Gear</b> <input type="checkbox"/> Bending <input type="checkbox"/> Centre Not Concentric to O/S <input type="checkbox"/> Cracks <input type="checkbox"/> Crushed/Crimped. <input type="checkbox"/> Cuffs <input type="checkbox"/> Heat Treat <input type="checkbox"/> Inspection Strip in Tube <input type="checkbox"/> Ripples in Bend <input type="checkbox"/> Torque Waves in Extrusion <input type="checkbox"/> Turning Sequence <input type="checkbox"/> Wave/Twist in Tube	<b>General</b> <input type="checkbox"/> Bend <input type="checkbox"/> BOM/Route <input type="checkbox"/> Broken/Damaged <input type="checkbox"/> Burrs <input type="checkbox"/> Contamination <input type="checkbox"/> Countersink <input type="checkbox"/> Cut Too Short <input type="checkbox"/> Drill Holes <input type="checkbox"/> Drawing <input type="checkbox"/> Finish <input type="checkbox"/> Folio	<input type="checkbox"/> Grain <input type="checkbox"/> Hardware <input type="checkbox"/> Inspection Incomplete <input type="checkbox"/> Instructions Incomplete/Unclear <input type="checkbox"/> Maintenance <input type="checkbox"/> Mislabeled <input type="checkbox"/> Misread <input type="checkbox"/> Offset <input type="checkbox"/> Out of Calibration <input type="checkbox"/> Out of Sequence <input type="checkbox"/> Outside Dimensions  <input type="checkbox"/> Ovalized <input type="checkbox"/> Over/Under tolerance <input type="checkbox"/> Part Incorrect <input type="checkbox"/> Part Lost/Missing <input type="checkbox"/> Part Moved <input type="checkbox"/> Positioned Wrong <input type="checkbox"/> Power Loss/Surge  <input type="checkbox"/> Pressure/Forced <input type="checkbox"/> Temperature/Cure <input type="checkbox"/> Weld <input type="checkbox"/> Wrong Stock Pulled  <input type="checkbox"/> Other
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DESIGN <i>CP</i>	DRAWN BY <i>CP</i>	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
CHECKED <i>[Signature]</i>	APPROVED <i>[Signature]</i>	DRAWING NO. D3243	REV. A SHEET 1 OF 1
DATE 04.01.09		TITLE BRACKET	SCALE 1:2
A	04.01.09	NEW ISSUE	



D3243-1 BEND DETAIL/  
D3243-041 ASSEMBLY  
SCALE 1:4

RELEASED  
04 02 03

INSTALL  
FE-032-EF INSERTS  
(4 PLACES)

2.75  $\begin{smallmatrix} +0.030 \\ -0.000 \end{smallmatrix}$

UNCONTROLLED  
FOR INFORMATION  
SUBJECT TO  
WORK  
13-03-04  
52897 M5  
26855

8.581  
8.206  
7.706

11.920  
11.420

Ø0.201  
(TYP 4  
PLACES)

Ø0.290  
(TYP 4  
PLACES)

GRAIN  
DIRECTION

1.375

5.273

3.714

**D3243-041 BRACKET ASSEMBLY  
(D3243-1 BRACKET)**

- 1) MATERIAL: 6061-T6, 0.063 THICK  
(QQ-A-250/11, REF DART SPEC  
M6061T6S.063)
- 2) FINISH: CHEMICAL CONVERSION COAT  
PER DART QSI 005 4.1  
POWDER COAT BLACK (4.3.5.7) PER  
DART QSI 005 4.3
- 3) BREAK ALL SHARP EDGES 0.005 TO  
0.010
- 4) ALL DIMENSIONS ARE IN INCHES
- 5) TOLERANCES ARE PER DART QSI 018  
UNLESS OTHERWISE NOTED

4.214  
R0.25 (TYP)  
3.339  
R0.38  
(TYP)

5.494

R2.75  
(TYP)

D3243-1  
FLAT PATTERN

R0.50  
(TYP)

0.500  
0.000

0.750  
0.500  
0.000

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13/5/27  
SD**REFERENCE ONLY****32.2 CARGO MIRROR REMOVAL**

- 32.2.1 Remove the AN3 bolts securing the D3243-041 Bracket to the skidtube and remove the Cargo Mirror.
- 32.2.2 Reinstall the AN3-4A bolts in the inserts. The bolts should be sealed with Sikaflex-241/-291 or Proseal 890 or MIL-S-8802 Class 'B2' sealant before installing.

**32.3 WEIGHT AND BALANCE**

Installation	Weight	LATERAL		LONGITUDINAL	
		Arm	Moment	Arm	Moment
D044-715-011	1.3 lb	41.7 in	54.2 lb-kg	32.0 in	41.6 in-lb
Cargo Mirror Installation	0.59 kg	1.06 m	0.63 m-kg	0.81 m	0.48 m-kg

**32.4 PARTS LIST**

Qty	Part Number	Description
<del>X</del>	<del>D044-715-011</del>	<b>CARGO MIRROR INSTALLATION</b>
<del>2</del>	<del>D1048</del>	Clamp
<del>2</del>	<del>D1049</del>	Saddle
<del>1</del>	<del>D2010-104</del>	Arm
<del>1</del>	<del>D2011-101</del>	Mirror
1	*D3014-1	Locknut
1	D3243-041	Bracket
4	ALS7-1032-130	Insert (or AKS7-1032-130, AKS4-1032-130, ALS4-1032-130)
4	AN3-4A	Bolt
4	AN526C1032R10	Screw (or AN526-1032R10)
4	AN960JD10L	Washers
1	*AN960JD416L	Washer

\* PARTS ARE INCLUDED WITH D2011-101 MIRROR

**TC Accepted****MAR 31 2004**

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